

REMARKS

Regarding the obviousness rejection of claims 1, 2, 6, 7, 11-12, 16-17 as being unpatentable over Salminen (U.S. 6,463,286) in view of Riihinen et al (U.S. 2002/0072363), the Examiner has again cited Salminen as particularly pertaining to claims 1, 6, 11, and 16 for showing the steps of sharing load information between network controllers, pointing to column 16, lines 29-33.

As pointed out previously, U.S. 6,463,286 to Salminen involves a GSM system which is not analogous to a 3GPP system for the various reasons discussed at pages 7 and 8 of our remarks in the amendment filed in response to the last Office Action.

What Salminen shows is a solution to a problem existing in GSM networks in a national roaming situation where there is a desire to handover from one network to another when an overload condition occurs. Salminen describes the prior art as addressing such an overload condition by either reducing the load in the overloaded network simply by restricting access to mobile stations by rejecting further call setup requests or by using the GSM national roaming option which in contrast to an international roaming service does not require subscription arrangements. Nevertheless, the national roaming service is in most cases not used, according to Salminen, because of certain disadvantages including the fact that there is no guarantee that the mobile stations which have already been rejected by their home network will be handled by the desired visited network or that an overload condition might even be caused in the visited network.

Thus, Salminen points a problem of inflexibility in the national roaming service which Salminen proposes to alleviate by providing for the switching means of the home network and the visited network to perform an exchange of request and response messages when a predetermined overload condition occurs in the

home network. Thereby, the home network and the visited network negotiate as to whether or not the visited network is capable of handling traffic for one or more mobile stations of the home network which cannot be handled in their own network. In particular, the switching means of the visited network returns a response message to the switching means of the home network to indicate whether or not it will and can grant an access to a particular number of mobile stations of the home network. Those mobile stations which have been indicated can then be registered in the visited network and are therefore guaranteed a flexible access in the network. In this way, the national roaming can be controlled on a gradual basis and it is avoided that mobile stations are granted access merely on a statistical basis as in the conventional national roaming service. At the same time the access is granted without causing an overload in the visited network.

In contrast to the above-mentioned problem in the GSM network, the present invention deals with a problem in the developing 3GPP network. The 3GPP specifications preceding the present invention did not provide any support for radio network controllers (RNCs) to share load information, i.e., between cells. This was not a problem because most manufacturers probably opted for a "one cell" approach to admission/congestion control. (See page 4 of the present specification at lines 8-10.) There are no RNCs in GSM.

The newly cited reference to Riihinen et al (US 2002/0072363) is a 3GPP system in which there is no support provided for RNCs to share load information. As can be seen in both modes illustrated in Figs. 2A and 2B as further illustrated in more detail, respectively, in Figs. 3A and 3B, the connection monitoring and decision making as to whether there is an overload

condition takes place entirely within a process module 202 within a single RNC without any negotiation between RNCs.

Riihinen et al is solving a different problem in the context of a 3GPP system that is completely different from that described in the GSM patent of Salminen or in the present specification. Riihinen describes a problem where initially a user equipment (UE) is served by an initial radio network controller (RNC). This serving RNC (SRNC) can continue to fulfill the role of a serving RNC in 3GPP even though the UE moves out of its vicinity and becomes linked also to a drift RNC (DRNC). In that case, the DRNC and the SRNC communicate over so called "Iur" interface between RNCs and established by 3GPP. As the UE continues to move away and as a result additional DRNCs become added to each other in an almost telescoping manner, certain signaling and load problems begin to arise. A first load consideration is that as the user equipment travels farther from the SRNC to involve an increasing number of DRNCs there is an exponential increase in both the information stored at the SRNC regarding the connection and the load over time on the Iur links interconnecting the SRNC with the DRNCs. A second load consideration is when the responsibility for the user connection is handed over from the SRNC to one of the drift RNCs, a certain amount of signaling between and processing in the involved network nodes occurs.

The solution of Riihinen et al involves connection monitoring at one of the RNCs which involves a decision making process 202-3 shown in Figs. 3A and 3B in which the RNC determines whether a new connection results in an overload. If so, a handover selection function 200a or 200b is carried out either at the RNC or in the core network to determine the "most expensive connection" and to determine a target SRNC for that most expensive connection. Once this is determined in either the

RNC or the core network, a handover selection communication function 206 communicates that decision that has already been made entirely in the RNC or the core network and which then initiates a handover process 204.

Thus, there is no mention in the Riihinen et al patent disclosure of the problem addressed by the present invention, i.e., that there was no support provided for RNCs to share load information or that load information should be shared.

As mentioned, the Salminen reference shows a negotiation between switching nodes in an overload condition. But it does not show the signaling of the presently claimed invention *between radio network controllers* of an overload condition with a proposed action. There is no hint or suggestion in Salminen of a 3GPP architectural topology where multiple RNCs connected to a core network are also interconnected by the so called Iur interface. And although Riihinen et al shows the Iur interface it does not show or suggest the claimed signaling of load condition report from one RNC to another within the claimed architectural environment with a proposed action.

Therefore, the question arises as to why one of skill in the art would be motivated to introduce the communication of load information between RNCs in Riihinen et al in view of Salminen. There is no such hint or suggestion in either of the applied references that a load condition report should be provided between RNCs and therefore there can be no motivation to make the combination proposed by the Examiner "for the purpose of properly balancing the load between two network controllers." If it were obvious, then why didn't Riihinen et al or the UTRAN Release 4 proposal CR 323 (mentioned at page 1, lines 8-14) make such a communication of a load condition report between RNCs with a proposed action?

Regarding claims 2, 7, 12 and 17, Salminen discloses circuit-switched a GSM network which does not have anything to do with data flow or the ability to restrict data flow such as you would find in a connection-less oriented 3GPP network.

Regarding claims 3-5, 8-10, 13-15, 18-20, the Examiner points particularly to claims 3, 4, 8, 9, 13, 14, 18 and 19 as being unpatentably obvious over Salminen in view of Frodigh et al (U.S. 6,381,458). Although column 2, lines 41-45 of Frodigh et al disclose soft handover, column 7, lines 33-36 do not disclose intersystem handover. Although Frodigh et al disclose soft handover control based on access network capacity, and even if Frodigh et al disclosed intersystem handover, there is no hint or suggestion in Frodigh et al of signaling a second radio network controller that a load condition exists and a proposed action.

Neither the Salminen nor Frodigh et al references have anything to do with the problem recognized by the inventors hereof, i.e., that the presently proposed inter-RNC load reporting only defines a generic load value, but not any particular action which the receiver should take in response to the received generic load value. This is a particularly acute problem in an environment in which equipment from multiple vendors have to interoperate. The present invention recognizes a problem of interoperability between controllers possibly from different vendors and proposes a solution, as claimed. None of this is either shown or even suggested by Salminen and Frodigh et al, either alone or in combination.

Regarding claims 5, 10, 15 and 20, the cited passage at column 16, lines 25-30 do not mention a radio bearer. In fact, the word "bearer" or the phrase "radio bearer" do not appear in the Salminen specification or claims.

Even if the passages cited at column 16, lines 25-30 did

constitute the release of a radio bearer, these claims are dependent claims either directly or indirectly from independent claims 1 and 11 which, as has been shown above, are novel and nonobvious over the applied art.

Regarding the rejection of claims 21-23 as being unpatentably obvious over Salminen in view of Lu et al (U.S. 5,734,979) further in view of Dobbins et al (U.S. 5,825,772), the Examiner states that Salminen discloses everything claimed as applied previously in connection with claim 1. The Examiner admits that Salminen fails to specifically disclose radio network controller and a standard interface between radio network controllers. However, the Examiner argues that the system switching means of the GSM second generation system operates similarly to the radio network controller of the third generation partnership project which is not correct. As pointed out in Fig. 1 and Fig. 2 of the present disclosure, the user equipment is connected to the core network by means of a UMTS terrestrial radio access network (UTRAN) which is more specifically shown in Fig. 2. This UTRAN includes separate radio network subsystems (RNS) each having a radio network controller (RNC) connected to multiple Node Bs. The RNCs are interconnected by a new interface called an Iur interface. It is this Iur interface that is referred to in the preamble of claims 21 and 23 as a "first standard interface." The signaling that is shown by Salminen between MSCs is a negotiation between switching centers. These switching functions carried out in the GSM system are not present in the radio network subsystems 18 and 20 of Fig. 2 of the present disclosure. Rather, these functions are carried out in the core network. These radio network subsystems are provided in the third generation for purposes for instance of macrodiversity explained previously.

Therefore, it is not correct to analogize the MSCs of Salminen to the RNCs of the present disclosure because they do not operate similarly and they do not adequately meet the limitation of the radio network controller as claimed in claims 21 and 23.

The Lu et al reference has to do with cellular base station intelligent call routing. Fig. 13, referred to by the Examiner shows a table depicting various embodiments of a base station according to the Lu et al disclosure. The idea of Lu et al is to move some of the call handling functions from the network to the base station so that, for instance, calls originating from mobile station 20a can be routed by means of the base station 40 alone to a destination mobile station 20b without having to go through the mobile switching center and the public switched telephone network. Lu et al attempt to provide a flexible configuration for the base station such as shown schematically in Fig. 3 and as a commercial product in Figs. 11 and 12. Lu et al also teach a flexible use of such a commercial chassis so that it is able to house different kinds of cards to create either a base station, a base station controller, a mobile switching center or the like. However, it is not clear why the Examiner is applying Lu et al. The Examiner states that Lu et al discloses a cellular base station with intelligent call routing quoting a passage at column 10, lines 27-37. But the Examiner does not state why Lu et al is being applied except to say that the cited passage at column 10, lines 27-37 "reads on" the similar functionality of the MSC, BSC and BTS. In an obviousness analysis made by the PTO, normally the applicant's claim is "read on" the applied reference so that the analysis can be made clear. It is requested that the Examiner make clear why Lu et al is being applied. As far as can be determined from a careful review of the Lu et al

specification, it does not appear to have anything to do with the subject matter of the rejected claims 21-23.

Regarding the third reference to Dobbins et al, the Examiner states that Dobbins et al discloses a standard interface. Again, the Examiner uses the expression "reads on" in relation to the IEEE tagging format disclosed in column 11, lines 64-67 without any reference to the rejected claims. Normally in a PTO obviousness analysis the Examiner will "read" the claim onto the applied reference. This has not been done in the rejection of claims 21-23 and it is requested that the Examiner clarify how she is reading the rejected claims onto the IEEE tagging format disclosed by Dobbins.

The Examiner does state that it would have been obvious to one of ordinary skill at the time the invention was made to apply the technique described by Salminen and Dobbins et al (without reference to Lu et al) to the 3 generation partnership project for the purpose of properly balancing the load between two network controllers.

This analysis is not correct. It would not have been possible for one of ordinary skill in the art at the time the invention was made to take the teaching regarding IEEE tagging of Dobbins et al (which has to do with increasing the throughput and local area networks with packet tags) to the techniques disclosed by Salminen to arrive at the presently claimed invention, even in view of Lu et al. Looking at the rejection as a whole, the Examiner seems to be saying that Salminen shows negotiated load sharing between different GSM networks and that Lu et al shows that network topographies and architectures can be made to be very flexible and, in view of that, you can take an IEEE tag that is used for a completely different purpose in a local area network application to identify packets so that it would be

obvious to do the signalling of load sharing according to claims 21-23 that a certain load condition exists using a measurement report and, in addition, a proposed action using an information element indicative thereof. This analysis simply does not constitute a prima facie case of obviousness.

To establish a prima facie case of obviousness the Patent Office must:

(1) set forth the differences in the claim over the applied references;

(2) set forth the proposed modification of the references which would be necessary to arrive at the claimed subject matter; and

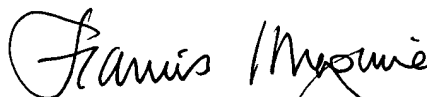
(3) explain why the proposed modification would be obvious. Even if the Examiner had correctly set forth the differences in the claim over the applied references according to the first requirement (which has not been done) the Examiner has not set forth a proposed modification of the references which would be necessary to arrive at the claimed subject matter. Moreover, there is no explanation of why such a proposed modification would be obvious.

It also must be emphasized that to satisfy the step 3 above, the Patent Office must identify where the **prior art** provides a motivating suggestion to make the modifications proposed in step (2). The mere fact that the prior art may be modified as suggested by an Examiner does not make the modification obvious unless the prior art suggests the desirability of the modification.

Withdrawal of the obviousness rejection of claims 21-23 is requested.

The objections and rejections of the Office Action of January 5, 2004, having been obviated by amendment or shown to be inapplicable, withdrawal thereof is requested and passage of claims 1-23 to issue is requested.

Respectfully submitted,



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